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Brief
E. Garvie
4/16/03

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Garvie

Group Art Unit: 3728

Serial No.: 09/584,375

Examiner: A Stashick

Filed : 05/31/2000

Title : CLEAT FOR FOOTWEAR

APPEAL BRIEF

Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Sir:

REAL PARTY IN INTEREST

Bruce Henry Garvie is the real party in interest in the above referenced patent application.

RELATED APPEALS AND INTERFERENCES

Neither Appellant's representative nor Appellant are aware of any related appeals and/or interferences affected by or having a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1-5 and 12-20 are currently pending and stand finally rejected. Claim 6-11 have been canceled. Appellant accordingly Appeals the Examiner's Final Rejection of claims 1-5 and 12-20 which is as follows:

1. Claims 1-5 and 12-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over European Patent Application No. 342,232 to Aotani ("Aotani") in view of U.S. Patent No. 5,996,260 to MacNeill ("MacNeill").

STATUS OF AMENDMENTS

No Amendments have been filed subsequent to the issuance of the Final Rejection. All amendments filed prior to the Final Rejection have been entered and considered.

SUMMARY OF THE INVENTION

Referring to Figure 1 of the application as filed, an insert 10 used in the manufacture of a cleat 26 for an article of footwear is disclosed. Each cleat 26 is composed of a traction member 28 positioned about and encasing the insert.

The insert 10 includes a stem portion 12 with an engagement means in the form of an external screw thread 14 being defined on a first end 16 of the stem portion 12 for releasable engagement with a complementary engagement formation of an undersole of the article of footwear or golf shoe. The insert 10 also includes a securing formation in the form of a skirt or flange 18 which extends substantially orthogonally from a second end 20 of the stem portion 12. The flange

18 has radially extending limbs 22 (as shown in Figures 3 to 6 in dotted lines). Four circumferentially spaced apart apertures 24 are defined in the flange 18. The second end 20 of the insert 10 includes a raised spike 19 in opposition to the stem 12.

The insert 10 is formed of a synthetic plastic material. In accordance with a preferred embodiment of the present invention, the synthetic plastic material may be an unreinforced impact modified PA6 grade plastic material with low density, such as obtainable from BASF South Africa under the trade name "Ultramid B3Z", and having a ball indentation hardness of 80 MPa. Further, it has now been found that the insert may be formed from LARIPUR - 30% glass filled crystalline polymer Laripur 72D25, CRASTIN glass filled crystalline polymer Crastin S600 or NYLON glass filled crystalline polymer Nylon B3-6. The insert 10 is integrally molded in a first step of an injection molding process at a barrel temperature between 210 - 285°C and molded at a temperature of between 60-70°C.

Referring now to Figures 2 to 5 of the application as originally filed, a cleat 26 in accordance with the present invention is disclosed. The cleat 26 is adapted for use with an article of footwear or golf shoe. Each cleat 26 includes the insert 10 as shown in Figure 1 and a traction member 28. The traction member 28 is secured to the securing formation 18 of the insert 10. The traction member 28 is of a resiliently deformable synthetic plastic material and is formed about the insert 10 in an injection molding process. Once formed, the securing formation 18 and the second end 20 of the stem portion 12 are encased in the traction member 28, with the first end 16 of the stem portion 12, on which the screw thread 14 is defined, protruding from the traction member 28.

In accordance with a preferred embodiment of the present invention, the traction member 28 is made from LARIPUR 5225, 51D Shore, HYTREL 4056, 90-95 Shore-A or ELASTOLLAN

598, 90-95 Shore-A and injection molded at a barrel temperature of 150 - 180°C and mold temperature of 50 - 60°C. Ultimately, and as will be discussed below in greater detail, the insert 10 is manufactured so as to be harder than the traction member 28.

It will be appreciated that, because both the insert 10 and the traction member 28 are formed of synthetic plastic materials, they will rigidly bond in the injection molding process at controlled temperatures. In fact, the insert 10 and traction member 28 may be made from the same synthetic plastic material with the hardness of the materials varied such that the insert 10 is harder than the traction member 28.

Each traction member 28 is substantially circular in plan view, having a substantially planar upper surface (as shown in Figure 2 of the drawings) which in use abuts the undersole of a shoe. A plurality of traction spikes 32 are defined on a bottom surface 34 of each traction member 28. The spikes 32 may be triangular in shape (Figure 4), rhombohedrical (Figure 3), circular (Figure 5), or wedge-like (Figure 6). Each spike 32 has a substantially planar contact portion 36 to enhance wear.

A central traction formation or spike 38 is defined on the bottom surface 34 of each traction member 28. The central traction spike 38 is aligned with the raised spike 19 on the second end 20 of the stem portion 12 of the insert 10. In fact, the raised spike 19 sits within the central spike 38 in a manner providing for early wear detection as discussed below.

The traction member 28 may be of a different color than the insert 10. Thus, when the central traction formation 38 is worn away by use, a part of the raised spike 19 of the insert will be visible. This feature serves as a wear indicator, alerting a user of the shoe to replace the cleat 26. As mentioned above , the fact that the raised spike 19 extends within the central spike 38 allows for early detection of cleat wear. Specifically, the spike 19 is revealed when only the top portion of the

central spike 38 is worn. A user is thereby readily warned as to the wear status of the cleat 26.

A pair of openings 40 are defined in each traction member 28. The openings allow the teeth of a tightening member to be inserted for insertion and removal of the cleat 26 from the shoe.

ISSUES

1. Whether claims 1-5 and 12-20 are unpatentable under 35 U.S.C. § 103(a) based upon Aotani in view of MacNeill.

GROUPING OF THE CLAIMS

The appealed claims do not stand or fall together.

Claims 1, 2, 3 and 12-20 stand or fall together.

Claims 4 and 5 stand or fall together.

ARGUMENTS

I. CLAIMS 1,2, 3 AND 12-20 ARE NOT OBVIOUS UNDER 35 U.S.C. § 103(a) BASED UPON THE DISCLOSURE OF AOTANI IN VIEW OF MACNEILL.

Claim 1 defines a cleat consisting entirely of plastic for an article of footwear. The cleat includes an insert and a plastic traction member. The insert and traction member constitute separate and distinct elements formed at distinct times in the manufacturing process. The insert is made from a synthetic plastic material. The insert includes a stem portion with engagement means for

releasable engagement with a complementary formation defined on an undersole of the article of footwear.

The plastic traction member is secured to the insert during a molding process. With the exception of the engagement means, the traction member encases the insert holding the insert captive within the traction member. The insert is made entirely from a synthetic plastic material having a greater hardness than the traction member.

In establishing the law governing obviousness-type rejections, the Supreme Court in *Graham v John Deere*, 383 U.S. 1, 148 USPQ 459 (1966), stated:

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquires may have relevancy. . . This in not to say, however, that there will not be difficulties in applying the nonobviousness test. What is obvious is not a question upon which there is likely to be uniformity of thought in every given factual context. The difficulties, however, are com- parable to those encountered daily by the courts in such frames of reference as negligence and scienter, and should be amenable to a case-by-case development. We believe that strict observance of the requirements laid down here will result in that uniformity and definitiveness which Congress called for in the 1952 Act.

With the foregoing in mind, the U.S. Patent & Trademark Office has determined that a prima facie case of obviousness is established by meeting three basic criteria. First, the Examiner must show some suggestion or motivation to modify the reference or to combine reference teachings. Second, the Examiner must show a reasonable expectation of success in modifying the primary reference based upon the teachings of the prior art. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Support for the

proposed modification and the reasonable expectation of success must be found in the prior art. MPEP 706.02(j).

Aotani does disclose a variety of spikes including a plastic insert and a screw portion. However, and despite the Examiner's assertions to the contrary, Aotani does not disclose a plastic traction member. In particular, the Examiner states:

> EP '232 discloses all the limitations substantially as claimed including the following: an insert (41a, 51a, 61a, 71a); a plastic traction member (41b, 51b, 61b, 71b); the insert and traction member are distinct elements (see Figures 4b, 5b, 6b, 7b); the insert formed of a synthetic plastic material (see col. 5, lines 15-46 and col 3, line 58-col. 4, line 15); the insert having a step portion with releasable engagement means (see Figures 4b, 5b, 6b, 7b, stem is threaded); the traction member secured to the insert and encasing the inset except for the engagement means (see Figures 4b, 5b, 6b, 7b); the insert made entirely of synthetic plastic material (see col. 5, lines 15-46 and col. 3, line 58-col. 4, line 15).

While much of the Examiner's statement is correct, the Examiner's assertion that a plastic traction member is disclosed by Aotani is entirely incorrect and not supported by the disclosure of Aotani. Specifically, Aotani discloses the following: element 41b is "an elastic member" (Col. 4, line 11); element 71b is a "projection 71b extended from one surface of the disk-shaped portion 71a" (Col. 4, lines 1-2); element 51b is "an elastic member 51b fitted over the disk-shaped portion 51a . . . the elastic member 51b is made of rubber containing a non-slip agent" (Col. 5, lines 19-27); element 61b is "an elastic member 61b fitted over the disk-shaped portion 61a . . . elastic member 61b is made of a compound rubber which exhibits a large degree of friction resistance against snow or ice" (Col 5, lines 34-44).

Aotani at no points discloses a "traction member" made of a plastic material. Rather, Aotani discloses elastic members manufactured from rubber and fitted over the "inserts".

The differences between the utilization of plastic as claimed in accordance with the present

invention and rubber as disclosed by Aotani is highly significant. When applied to footwear, rubber is traditionally used as a friction creating material which "sticks" to a surface upon which it contacts. In contrast, the plastic of the present invention is a relatively hard and durable material adapted for use in cleats such that the plastic digs into either grass, dirt or sand for providing a user with greater stability while performing a sport. The Examiner has overlooked a significant aspect of the invention. The aspect of combining plastics together to give the cleat the hardness and flexibility to withstand the pressures exerted underfoot, and without melting while in the second molding step cannot merely be dismissed. Encasing one plastic in another to form a low cost cleat was not an easy and obvious task. It required years of testing various plastic to develop this invention and therefore is not obvious. In fact, the difficulty the inventor overcame in developing the present cleat is likely the reason the examiner has failed to find prior art disclosing or suggesting the claimed cleat.

Plastics and rubbers are generally considered to be mutually exclusive materials, and serve very different purposes within the manufacturing world. In fact, one test to determine if something is rubber or plastic is to stretch the material and see if it retakes its original shape. In order to mold rubber it must be vulcanized into a single giant molecule and cannot be remolded. This is how tires are made. Whereas plastics are generally formed of many short rigid molecules which become soft and pliable whenever heated and can be remolded may times. This is why plastic can be easily recycled and rubber cannot.

With the foregoing in mind, it is Appellant's opinion that Aotani fails to disclose the plastic material claimed in accordance with the present invention. The Examiner has improperly assumed that rubber is plastic and the outstanding rejection is therefore flawed. Clearly, Aontani appreciated the distinction between plastic and rubber as the disclosure indicated the insert was made of metal

or plastic and the traction member was made from rubber. Metal, plastic and rubber are three different materials.

Despite the fact that the outstanding Office Action makes no assertion that it would be obvious to replace the rubber of Aotani with plastic based upon the disclosure of MacNeill, Appellant feels it is important to address such a concern. Any modification based upon the disclosure of MacNeill would be inappropriate as MacNeill and Aotani are dealing with very different materials and one would not look to the teachings of MacNeill for modifying the rubber disclosed by Aotani. To do so would change the very essence of Aotani which has chosen to use rubber in an effort to take advantage of its very distinctive properties.

Further, MacNeill has been relied upon for its teaching of different hardnesses. Hardness is not generally a characteristic of rubber. With regard to the relative hardness of the materials disclosed by Aotani and MacNeill, the fact that it would be inappropriate to replace the rubber elastic members of Aotani with plastic as disclosed MacNeill renders it similarly inappropriate to replace the rubber elastic members of Aotani with plastic softer than the disk shaped portion of the spikes disclosed by Aotani.

One does not merely substitute rubber for plastic. Rubber is a thermoset, whereas plastics are general thermoplastic. Rubber once set retains its elasticity whereas plastic loses its elasticity. The word plastic comes from the Greek "plastikos," meaning "moldable." Most polymer plastics are formed through the application of heat and pressure. The thermoplastic polymers disclosed by the inventor in the specification can be reheated and reshaped whereas, thermosetting polymers, such as rubber, retain their shape even at relatively high temperatures and cannot be reformed.

We call plastics *plastic* because they are pliable, that is, they can be shaped and molded easily.

Some nuances and details of what makes a plastic a plastic might be useful to go over. For example, why do we call a material a plastic and not a rubber, or elastomer? The answer is in the bouncing. You can stretch an elastomer, and it bounces back. Plastics tend to either deform permanently, or just plain break, when you stretch them too hard. Although plastics don't behave as well as rubber when they're stretched, it takes a lot more energy to stretch them in the first place. In other words "plastics resist deformation better than elastomers do". This is good when we don't want our material to stretch and the inventor does not want his materials to stretch. It takes more energy to stretch the plastic, making it resistant to deformation. But at the same time, if you pull hard enough, you cannot only stretch a plastic, but it will stay in the shape you stretched it into once you stop stretching it. Elastomers bounce back when you let go.

With regard to hard and soft plastic, soft plastic is not rubber. The plastic keys on your keyboard are hard, while the plastic around the cables of the same computer is soft. This is because all plastics have a certain temperature above which they are soft and pliable, and below which they are hard and brittle. This is called the glass transition temperature, or *Tg*. The *Tg* is different for each plastic. At room temperature, some plastics are below their *Tg*, and so they are hard. Other plastics are above their *Tg* at room temperature, and these plastics are soft. A soft plastic is pliable, not elastic. Rubber is elastic.

Further to the other deficiencies discussed above, the Examiner has mischaracterized what is disclosed in Figure 7b. The Examiner suggests that Figure 7b discloses a cleat with distinct "insert" and "traction members" and a cleat with the "insert" encased within the "traction member". With reference to Figure 7b of Aotani, no such structure is disclosed. Aotani appears to disclose a rather typical one-piece spike which in no way includes distinct elements or a traction member encasing an

insert.

As such, Applicant respectfully requests that the outstanding rejection of claim 1 be reversed. The Examiner has failed to present a rejection which may be sustained as set forth by the relevant case law and the governing interpretation of the U.S. Patent & Trademark Office. Specifically, the Examiner has failed to show some suggestion or motivation to modify the reference or to combine reference teachings; the plastic disclosed by MacNeill offers properties very different from those contemplated by Aotani and one skilled in the art would certainly not look to replace rubber with plastic when rubber has been chosen based upon its non-slip characteristics. Second, the Examiner has failed to show a reasonable expectation of success in modifying the primary reference based upon the teachings of the prior art; in fact, modification of Aotani as proposed by the Examiner would be contrary to the intent of Aotani and likely destroy the product intended by Aotani in view of the fact that rubber and plastic are very different and offer very different material characteristics.

As to claims 12 and 15, they include limitations substantially similar to those defined in claim 1 and are believed to overcome the prior art of record for the reasons presented above with regard to independent claim 1. As such, Appellant respectfully requests that the rejection relating to claims 12 and 15 also be reversed.

As to claims 2, 3, 13, 14 and 16-20, they are respectively dependent upon independent claims 1, 12 and 15, and are believed to overcome the prior art of record for the reasons presented above with regard to independent claim 1. As such, Applicant respectfully requests that the rejection relating to these dependent claims also be reversed.

II. CLAIM 4 IS NOT OBVIOUS UNDER 35 U.S.C. § 103(a) BASED UPON THE DISCLOSURE OF AOTANI IN VIEW OF MACNEILL.

Claim 4 is dependent upon claims 1 and 2 and further defines a cleat "wherein the insert includes a raised spike opposite the first end of the stem portion, the raised spike being aligned with the traction member spike to cooperate therewith and function as a visual wear indicator for the cleat". The Office Action suggests that Figures 6 and 8 of Aotani disclose such a structure.

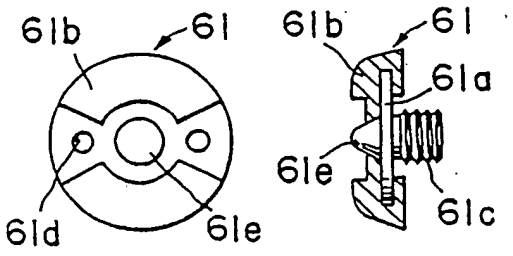


FIG. 6

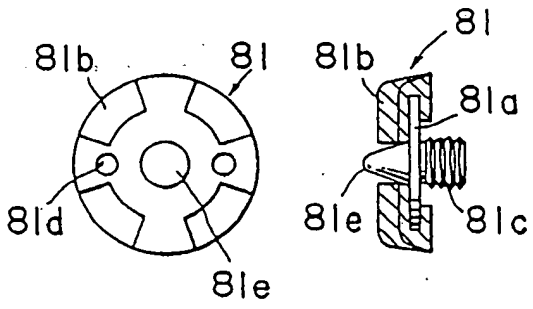


FIG. 8

Figures 6 and 8 disclose spikes having an "insert" (presumably elements 61c and 81c) which are, however, not fully encased within a "traction member". As such, neither Figures 6 nor 8 meet the basic limitations of independent claim 1. As such, these disclosures are not appropriate for application in rendering the pending claims unpatentable.

Further, the "raised spike" disclosed in Figures 6 and 8 of Aotani may not function as visual wear indicators as they are not encased within the traction member. The entire idea of the visual wear indicators in accordance with the disclosed invention is that the traction member will wear away revealing an underlying spike of a different color. As the "spikes" of Aotani are not covered by the traction member as required by the claims, it would be impossible for these members to function as visual wear indicators in accordance with the present claims.

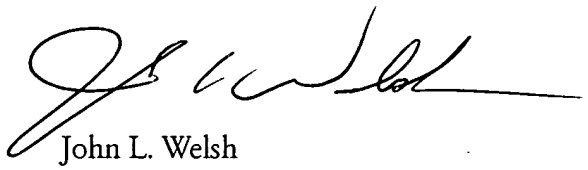
Aotani, therefore, fails to disclose the limitations required in accordance with claim 4. Similarly, nothing in the prior art discloses or suggests the modification of Aotani to include these limitations. In fact, the outstanding Office Action presents no rationale for overcoming this deficiency in the disclosure of Aotani. For the reasons presented above with regard to the limitations of claim 4, as well as the reasons present above with regard to claim 1, it is Appellant's opinion that claim 4 overcomes the prior art of record and Appellant respectfully requests that the rejection under 35 U.S.C. § 103(a) be reversed.

As to claim 5, it is dependent upon independent claim 4 and Appellant respectfully requests that the rejection thereof be reversed for the reasons presented above with regard to claim 4.

III. CONCLUSION

In conclusion, Appellant has now shown that the references cited in the Office Action neither disclose nor suggest the claimed cleat for footwear. Therefore, it is respectfully requested that all of the outstanding rejections of claims 1-5 and 12-20 be reversed.

Respectfully submitted,



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APPENDIX

CLAIMS ON APPEAL

1. A cleat for an article of footwear consisting entirely of plastic, the cleat comprising:

an insert and a plastic traction member, the insert and traction member constituting separate and distinct elements formed at distinct times in the manufacture process;

the insert is from a synthetic plastic material, wherein the insert has a stem portion with engagement means for releasable engagement with a complementary formation defined on an undersole of the article of footwear; and

the plastic traction member is secured to the insert during a molding process, and encases the insert with the exception of the engagement means, thereby holding the traction member captive on the insert; wherein the insert is made entirely from a synthetic plastic material having a greater hardness than the traction member.

2. The cleat according to claim 1, wherein the insert includes:

a stem portion having a first end and a second end;

an engagement means at the first end of the stem portion for releasable engagement with a complementary engagement formation defined on an undersole of the article of footwear; and

a securing formation extending from the second end of the stem portion for securing the traction member to the insert.

3. The cleat according to claim 1, wherein the insert is formed of a synthetic plastic material having a hardness between 75 MPa and 85 MPa.

4. The cleat according to claim 2, wherein the insert includes a raised spike opposite the first end of the stem portion, the raised spike being aligned with a traction member spike to cooperate therewith and function as a visual wear indicator for the cleat.

5. The cleat according to claim 4, wherein the insert and traction member are made from different color materials.

12. A cleat for an article of footwear consisting entirely of plastic, the cleat comprising:

an insert and a plastic traction member, the insert and traction member constituting separate and distinct elements formed at distinct times in the manufacture process;

the insert being made from a synthetic plastic material including a stem portion with an engagement means at a first end of the stem portion for releasable engagement with a complementary engagement formation defined on an undersole of the article of footwear and a securing formation in the form of a flange extending orthogonally from the stem portion;

the traction member being secured to the insert and encasing the flange during a molding process; and

wherein the insert is made from a synthetic plastic material having a greater hardness than the traction member.

13. A cleat according to claim 1, wherein the traction member includes a pair of passages arranged immediately adjacent to the insert, for receiving corresponding portions of a tool for fastening the cleat to the article of footwear.

14. A cleat according to claim 12, wherein the traction member includes a pair of passages arranged immediately adjacent to the insert, for receiving corresponding portions of a tool for fastening the cleat to the article of footwear.

15. A cleat for an article of footwear consisting entirely of plastic, the cleat consisting of an insert and a traction member, the insert and traction member constituting separate and distinct elements formed at distinct times in the manufacture process;

the insert consisting of a stem portion having a first end and a second end with an engagement means at the first end of the stem portion for releasable engagement with a complementary engagement formation defined on an undersole of the article of footwear; and

the traction member being made from plastic and encasing the second end of the insert therein during a molding process such that only the stem portion protrudes from the traction member; and

wherein the insert is made entirely from a synthetic plastic material having a greater hardness than the traction member.

16. The cleat according to claim 2, wherein the securing formation is a flange extending radially from the stem portion.

17. The cleat according to claim 16, wherein the flange includes a plurality of apertures extending therethrough.

18. The cleat according to claim 12, wherein the insert includes:

a stem portion having a first end and a second end;

an engagement means at the first end of the stem portion for releasable engagement with a complementary engagement formation defined on an undersole of the article of footwear; and

a securing formation extending from the second end of the stem portion for securing the traction member to the insert.

19. The cleat according to claim 18, wherein the securing formation is a flange extending radially from the stem portion.

20. The cleat according to claim 19, wherein the flange includes a plurality of apertures extending therethrough.